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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,143	10/09/2003	Kentaro Yamakawa	XA-9937	6450
181 7590 12/27/2006 MILES & STOCKBRIDGE PC 1751 PINNACLE DRIVE SUITE 500 MCLEAN, VA 22102-3833			EXAMINER TRAN, VINCENT HUY	
			ART UNIT 2115	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	DELIVERY MODE
3 MONTHS			12/27/2006	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/681,143

Applicant(s)

YAMAKAWA, KENTARO

Examiner

Vincent T. Tran

Art Unit

2115

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5 and 6 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/09/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This Office Action is responsive to the communication filed on 10/09/03
2. Claims 1-6 are pending for examination.
3. The text of those sections of Title 35, U.S. code not included in this action can be found in a prior Office action.

### ***Priority***

4. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

### ***Information Disclosure Statement***

5. The information disclosure statement (IDS) submitted on 10/09/03 were considered by the examiner.

### ***Specification***

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: On-chip microcomputer with multiple timer

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 1-2, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitra U.S. Patent No. 5,577,235 in view of Oljaca et al. U.S. Patent No. 7,098,617 ("Oljaca") and Lewis US 20020005861.

11. As per claim 1, Mitra teaches a microcomputer, comprising:

a first timer having first resolution that can be used for controlling the speed of DC and other motor [col. 1 lines 36-38; col. 2 lines 36-62]; and

a second timer that has second resolution higher than the first resolution [col. 1 lines 36-37],

wherein the first timer and the second timer are formed on a semiconductor integrated circuit [col. 1 lines 36-38].

Mitra does not explicitly teaches that the first timer can be used for controlling cooling equipment and the second timer can be used for adjusting the brightness of a display device.

However, as show in col. 1 lines 18-35, col. 3 lines 19-24 and col. 4 lines 11-22, Mitra discloses an invention directed to a single chip general purpose microprocessor device to perform selective control functions on an external controlled system having multiple timing function modules [col. 5 lines 1-8] that can satisfies the availability of all the different timing functions in a large number of diverse control applications while minimizing die area and cost.

Specifically, Mitra teaches a first timer having first resolution [8-bit col. 6 lines 2-11, 52-56] that can be used for controlling the speed of motor. Therefore, it is obvious to one of ordinary skill in the art that the first timer of Mitra can be used to controlling cooling equipment since as taught by Oljaca that such feature is an old well know art for controlling the cooling equipment in a computer [col. 1 lines 35-43]; and

a second timer that has second resolution [16 bit timer – 32 fig. 3] can be used for adjusting the brightness of a display device since as taught by Lewis that such feature is an old well know art for controlling the brightness of a display device [paragraph 0006].

Therefore, it is obvious to one of ordinary skill in the art at the time of the invention to have modified the general purpose microprocessor of Mitra with the well know art as discuss above to obtain he invention as specified in claim 1.

12. As per claim 2, Mitra teaches a microcontroller generally have one or more timers typically register which are 8 or 16 bit wide where these timers are generally utilized to implement various timing function [col. 1 lines 36-40]. Therefore, it is obvious that inherently the first timer of Mitra outputs a signal of a first frequency, and the second timer output a signal of a second frequency higher that the first frequency.

13. As per claim 5, Mitra teaches the second timer comprises a pulse width conversion circuit [col. 2 lines 36-46].

14. As per claim 6, Mitra teaches the first timer can output a plurality of signals of a first frequency, and

wherein the second timer can output a plurality of singles that is the signal of the second frequency higher than the first frequency and differs in a pulse width [inherent].

15. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mitra, Oljaca and Lewis as applied to claim 1 above, and further in view of Keidl et al. U.S. Patent No. 5,617,007 ("Keidl")

16. As per claim 3, Mitra does not teaches the second timer can be further used for controlling the charge and discharge of a battery. However, Mitra specifically teaches a microcontroller chip having several timing modules capable of controlling multiple PWM function. Therefore, it is obvious to one of ordinary skill in the art that the second timer of Mitra can be used for controlling the charge and discharge of a battery since as taught by Keidl that such feature is an old well know art [col. 3 lines 1-40].

***Allowable Subject Matter***

17. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent T. Tran whose telephone number is (571) 272-7210. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas c. Lee can be reached on (571) 272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Vincent Tran

  
**CHUN CAO**  
**PRIMARY EXAMINER**